

## t77\_memstr\_0

(TMdDn3Vh8Dumxxg5b5ffBccTwUpHEhQHkyw)

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Let  $v1\_setfam\_1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v5\_funct\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v3\_relat\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (3)$$

Assume the following.

$$\forall X0.\exists X1.(v1\_relat\_1 X1) \wedge ((v3\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge ((v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0)))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_setfam\_1 X0) \wedge (((\neg v2\_struct\_0 X1) \wedge ((v2\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0))) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X1)))) \Rightarrow (\neg v1\_xboole\_0 (k4\_memstr\_0 X0 X1 X2)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0) \wedge ((v3\_relat\_1 X0) \wedge (v1\_funct\_1 X0))) \Rightarrow (v1\_xboole\_0 (k1\_funct\_1 X0 X1)) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_setfam\_1 X0) \wedge (l1\_memstr\_0 X1 X0)) \Rightarrow \\ & ((v1\_relat\_1 (k2\_memstr\_0 X0 X1)) \wedge ((v4\_relat\_1 (k2\_memstr\_0 \\ & X0 X1) (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 (k2\_memstr\_0 X0 X1)) \wedge (v1\_partfun1 \\ & (k2\_memstr\_0 X0 X1) (u1\_struct\_0 X1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\ & (l1\_memstr\_0 X1 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X1)) \Rightarrow (k4\_memstr\_0 X0 X1 X2 = k1\_funct\_1 (k2\_memstr\_0 X0 X1) X2))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow ( \\ & (v1\_partfun1 X1 X0) \Leftrightarrow (k1\_relset\_1 X0 X1 = X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. (( \\ & v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((v5\_funct\_1 X1 X0) \Leftrightarrow (\forall X2. \\ & (X2 \in k9\_xtuple\_0 X1) \Rightarrow (k1\_funct\_1 X1 X2 \in k1\_funct\_1 X0 X2)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 \\ & X1 X0)) \Rightarrow ((v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)))) \end{aligned} \quad (11)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\ & ((v2\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0))) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ & X2) \wedge ((v4\_relat\_1 X2 (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 X2) \wedge ((v5\_funct\_1 \\ & X2 (k2\_memstr\_0 X0 X1)) \wedge (v1\_partfun1 X2 (u1\_struct\_0 X1)))))) \Rightarrow \\ & (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (k1\_funct\_1 X2 \\ & X3 \in k4\_memstr\_0 X0 X1 X3)))) \end{aligned}$$